

# **Model for Process Description: From Picture to Information System**

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## ***Abstract***

A new model for the development of process support information systems is proposed. It is robust and inexpensive, capable of providing timely, necessary information to the user by integrating Products, Instructions, Examples, Tools, and Process.

## ***Introduction***

In recent years increasing pressures led to a sudden realization, both in government and industry, that work has to be done faster, better, and cheaper. In addressing this problem, two assertions became apparent:

- processes required for product or service delivery need to be optimized

- new processes should be supported by information systems.

While one can probably argue about the quality of process optimization technology, state of practice in developing relevant information systems is itself slow, expensive, often yielding less than perfect results.

In this paper we shall propose a new model for the development of information systems charged with supporting socio-technical processes. This model presents a paradigm shift which may offer a solution to the problem.

## ***What is a process***

Before we proceed with the model, several issues should be brought up. First of all, what is a process? Of course there are numerous definitions of the word. In general, a process is a set of components performing a series of actions involved in an accomplishment of an end.

In this paper we shall narrow the definition and only concern ourselves with socio-technical processes. From the functional and logical point of view, the above restriction might not have any serious implications. Unfortunately, these are the only points of view most often considered. Significant differences only appear, when we consider the physical perspective. What? or Who? does the work is not necessarily a concern for the process analyst. They want to know if the component (machine or human) is capable of carrying out a function in a logical order? If the answer is positive, principles of scientific management kick in, and there . . . comes out a process diagram.

Processes under our consideration are different. Here, delivery of service or product is entrusted to an individual(s) who works with tools in a thoughtful, systematic, effective, and efficient manner. For us, process and responsible individual are almost synonymous. People have needs, desires and a will. We therefore propose, that socio-technical processes might have the same. Therefore, these, often subjective items, should be considered by the analyst as constraints additional to the multitude already dictated by sober systems design practices.

## What is an information system?

In our context an information system has only one purpose. It must further aid to the effectiveness and efficiency of the process. Process support information system is a slave! As a good slave, it should have very few needs. Its desires should be irrelevant, and under no circumstances should it have a will. Is this currently the case in practice? Certainly not. Information systems are notoriously needy, and their will is unbreakable.

It seems that the relationship between the master and a slave deteriorated to a state of sadomasochism. The slave **needs** a command (otherwise computer can not function), and the master enjoys the gamble that the command (generated by an educated guess) is going to help him achieve the desired end.

Here, we shall forget about the needs of the computer, and concentrate instead on effectiveness and efficiency of delivering a product or service.

## The model

Our information systems model is extraordinarily simple. It contains three types of elements: process nodes, products and tools. Each element is text, picture, or their combination, linked with several of its attributes:

Process node	Product	Tool
description instructions examples tools approach (sub-process) deliverables (products)	description instructions examples tools approach (process)	description instructions examples interfaces

## Scenario

An individual has to produce X (a document, model, design, decision, etc...)

If the user knows nothing about X other than its name.

The system presents a user with an interface to identify X. This might be a list or a data base. By making an appropriate selection the user is able to access information describing the product, instructing him what to do, presenting an example of X, providing access to software which might be useful, and proposing an approach (or process) for meeting the delivery.

User chose to go through the process proposed above or selects a process from a list or data base.

The user is now presented with a picture of the process. From here he can access necessary descriptive and instructional information, examples, available software tools and intermediate products.

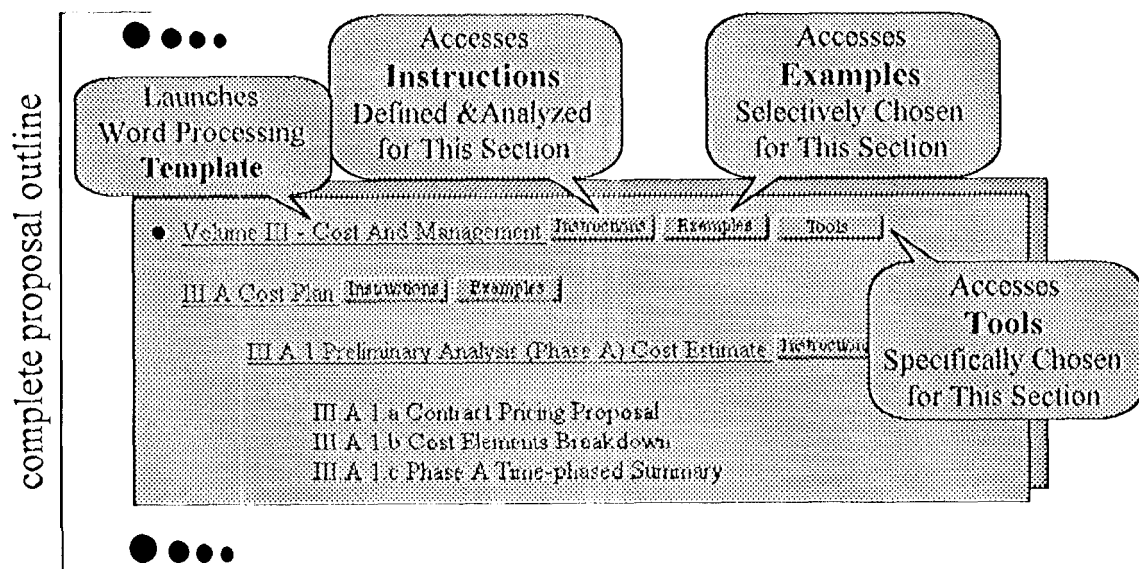
## Implementation

This model can be implemented in a number of ways. The most elementary is "on paper", but that is not elegant. Most convenient, is an implementation on the World Wide Web (WWW), with current capabilities sufficient for creative processes. implementation in a workflow environment is probably most "sexy".

## Examples

### Product example

For a case where a product is a document, we present the user with an interface consisting of a complete outline of the finished deliverable. (a proposal, in this case).

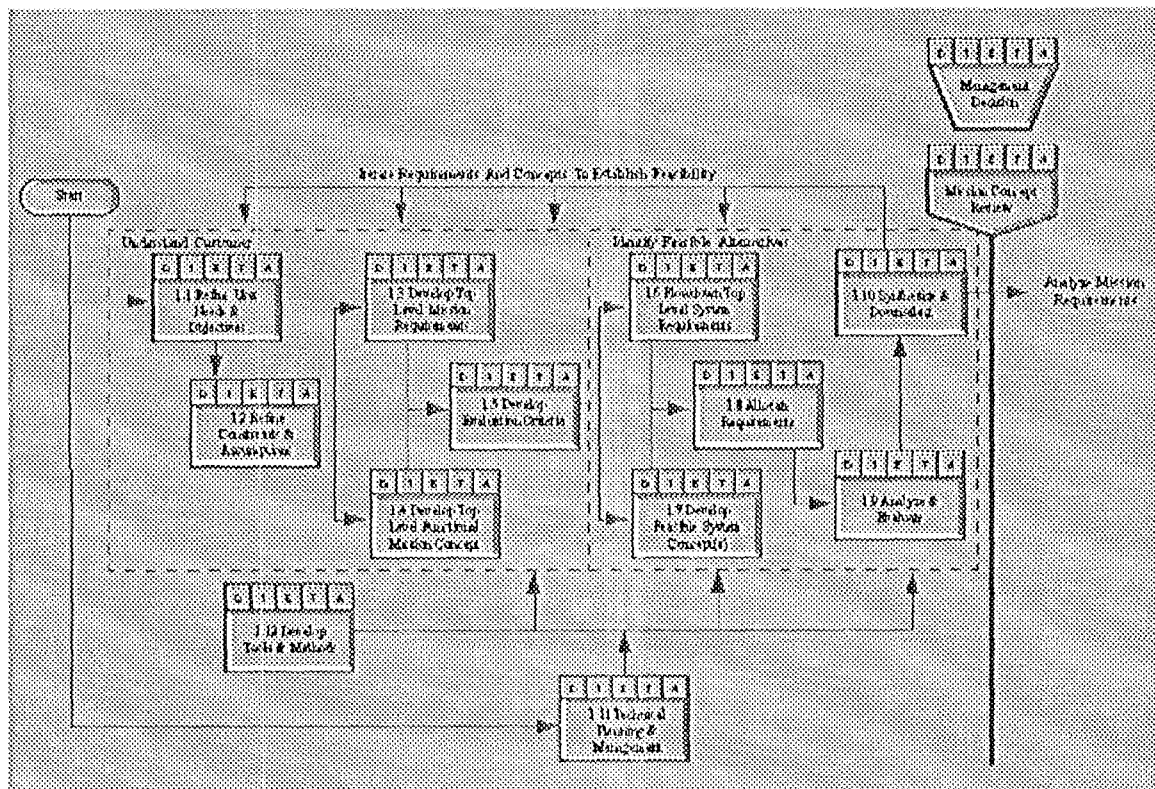


### Process example

A process node, can be represented by a map with six "hot spots".

description (D)	instructions (I)	examples (E)	tools (T)	approach (A)
deliverables				

When this map is displayed in a form of a button, it can be combined with other nodes and form a complicated (or simple) process diagram. (Unless implemented in a workflow environment, arrows have no meaning other then instructional or esthetic.)



By selecting “**IY**” for process node 1.7, for example, the user can access the description of the process node:

#### Phase A 1.7 Develop Feasible System concept(s)

The effort develops at least one conceptual design for a system that meets the system requirements. This conceptual design describes the major parts and how they interrelate and interoperate. The detail is sufficient to support inputs to estimates of cost and schedule, risk assessments, and evaluation criteria. Emphasis is on feasibility not optimality. As shown, the design activity may occur somewhat in parallel with the requirements flowdown.

Deliverables	Instructions	Examples	Tools	Approach
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or a list of products coming out of that node by clicking on the main part of the button in the process diagram, or selecting deliverables icon above:

#### Products for Phase A 1.7 Develop Feasible System concept(s)

Strawman System Description: Does not represent an optimal solution. Purpose is to show one feasible solution exists to meet the mission needs and provide a reference concept for early cost/schedule estimates...

Description	Instructions	Examples	Tools	Approach
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Design Disclosures: Various data drawings, etc. that describes an item's construction and operational characteristics. Disclosure gives evidence to satisfaction of requirements and specifications. May address compatibility with overall system; EMC; mass, reliability; thermal; life; storage; duty cycle; schematics; functional flow diagrams...

Description	Instructions	Examples	Tools	Approach
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Product Breakdown Structure: Hierarchical listing of the entities associated with the system such as hardware items, software, and information items. Also called physical system hierarchy.

Description	Instructions	Examples	Tools	Approach
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By choosing to select 

Tools
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 for the Product Breakdown Structure, the user is presented with a list of available tools:

WBS Chart: The WBS Chart program is a full-featured Windows program that allows you to create, edit and print PBS, WBS, Organizational and other hierarchical types of charts.

Description	Instructions	Examples	Launch Tool	Interfaces
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ClarisImpact: CalrisImpact is a smart, integrated business graphics program that allows you to create, edit, and communicate attractive, professional-looking business graphics quickly and easily.

Description	Instructions	Examples	Launch Tool	Interfaces
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At this point, if the user chooses to launch a tool, he may do so by selecting the appropriate button.

### ***Is this a better mousetrap?***

in the classical case, a user is expected to know exactly what they want, and then "enlighten" the information system. It, in tern, is suppose to come up with accurate, necessary, timely information designed to help the user. What if the user doesn't know? The reason this approach is suboptimal is illustrated by Plato through a dilemma posed by Meno: you argue that a man cannot inquire either about that which he knows or about that which he dots not know; for if he knows, he has no need to inquire; and if not, he cannot; for he does not know the very subject about which he is to inquire.

in our model we present a process based system which deals with Meno's dilemma in a very effective way. A user is presented partial information contained in a visual cue of a process diagram. Since the picture of the process is composed of active icons, the user is offered an opportunity to ask about things, products he is currently working on, those appearing on the diagram. Through this iconic query interface the information system acquires a new role. It no longer demands anything from the user. It is simply there for him. It is there, continuously improving process effectiveness by providing the user

information about their job, as well as improving efficiency by providing software tools at the time they are needed.

### *Acknowledgment*

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